

### SUPPORT FOR THE AMENDMENT

This Amendment cancels Claims 3 and 21; and amends Claim 1. Support for the amendments is found in the specification and claims as originally filed. In particular, support for Claim 1 is found in canceled Claim 21 and in the specification at least at page 4, lines 27-30. No new matter would introduced by entry of these amendments.

Upon entry of these amendments, Claims 1-2, 4-6 and 8-20 will be pending in this application. Claim 1 is independent.

### REQUEST FOR RECONSIDERATION

Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the application, as amended, in light of the remarks that follow.

The present invention provides a gentle and economical process for removing halide compounds adhering to finely divided, pyrogenically prepared metal oxide particles. Specification at page 1, lines 3-5, page 2, lines 19-22.

Claims 1-6 and 8-21 are rejected under 35 U.S.C. § 103(a) over GB 1,197,271 ("GB-271") in view of U.S. Patent No. 6,328,944 ("Mangold").

GB-271 discloses a process for the purification of finely divided metal oxide particle, in which metal oxide particles and steam or steam and air are passed countercurrently through a vertical column. Specification at page 1, lines 28-31; GB-271 at page 1, lines 12-19. GB-271 discloses that the temperature in the vertical column is 400 to 600°C. GB-271 at, e.g., page 2, lines 96-100.

The Office Action cites Mangold for disclosing densities of silicon dioxide particles produced by flame hydrolysis. Final Rejection at page 3, lines 8-21.

However, the cited prior art fails to suggest the independent Claim 1 limitation that "a **maximum temperature of no greater than 150°C** prevails in the [upright] column".

The Final Rejection asserts with respect to Claim 21, now incorporated into independent Claim 1, that:

In regard to claim 21, GB'271 teaches a temperature of 400-600°C, and does not mention using a maximum temperature of 150°C. However, **GB'271 teaches that temperatures of 200-500°C are effective. See page 1, lines 60-64.** Though the given temperature does not fall in the given range, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. See MPEP 2144.05. In the instant case, the temperature of 150°C is significantly close to the given range (and is a temperature at which necessary steam exists) that one skilled in the art would expect the temperature as being effective for purifying metal oxide particles.

Furthermore, temperature is a parameter routinely optimized in the chemical art. Selection of a temperature is a matter of design choice and routine optimization that fails to product an unexpected result. In particular one of ordinary skill in the art would have been motivated to lower the temperature in order to decrease energy costs. Final Rejection at page 6, line 21 to page 7, line 12 (emphasis added).

However, GB-271 does not disclose that temperatures of 200 to 500°C are effective in GB-271's vertical column or independent Claim 1's "upright column". GB-271 actually discloses:

It is also known that deacidification can be carried out by heat treatment at temperatures in a range from **200 to 500°C.** with moist air **in a rotating tube** or **in screw conveyors** or **on an endless steel belt.** GB-271 at page 1, lines 60-64 (emphasis added).

Regarding GB-271's vertical column, GB-271 discloses:

However, it was surprisingly found that finely divided pyrogenic oxides could be purified with particular advantage providing treatment with the mixture of steam and an inert gas is carried out in an empty shaft in the manner prescribed by the present invention **instead of in a fluidised bed** by countercurrent or parallel current, **as in convention processes.**

...  
The temperature required for treatment was reduced from the **600-800°C. commonly used in the fluidised bed process to** from **400 to 600°C. in the vertical tube process.** GB-271 at page 2, lines 77-85; 96-100 (emphasis added).

Thus, GB-271 discloses that when using a **vertical tube** as prescribed by GB-271 instead of a fluidized bed the minimum temperature can be decreased from a minimum of 600°C to a **minimum of 400°C**.

There is no suggestion in GB-271 that the minimum temperature for a **vertical tube** process is the same as for processes **in a rotating tube** or **in screw conveyors** or **on an endless steel belt**.

The **minimum of 400°C** that is just barely possible using GB-271's **vertical tube** process is significantly higher than the **minimum of 200°C** that GB-271 discloses for processes **in a rotating tube** or **in screw conveyors** or **on an endless steel belt**.

There is no reasonable expectation that GB-271's disclosure of a **minimum of 200°C** for processes **in a rotating tube** or **in screw conveyors** or **on an endless steel belt**, but a **minimum of 400°C** in a **vertical tube** process, would have led the skilled artisan to a heat treatment in a **vertical tube** process at a temperature of **200°C**.

There is even less expectation that GB-271's disclosure of a **minimum of 400°C** for heat treatment in a **vertical tube** process would have led the skilled artisan to independent Claim 1's heat treatment in an **upright column** at a maximum temperature of **no greater than 150°C**.

Because the cited prior art fails to suggest the independent Claim 1 limitation that "a maximum temperature of no greater than 150°C prevails in the [upright] column", and there is no reasonable expectation of success, the rejection under 35 U.S.C. § 103(a) should be withdrawn.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

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Respectfully submitted,

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A handwritten signature in cursive script, reading "Corwin Paul Umbach".

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